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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,978	11/30/2000	Andrew J. Wardrop	10001-29152	2125

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EXAMINER	
CHANG, EDITH M	

ART UNIT	PAPER NUMBER
2634	5

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/726,978	WARDROP ET AL.	
	Examiner	Art Unit	
	Edith M Chang	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Phillips et al. (US 5867535).

Regarding **claim 2**, Phillips et al. discloses an apparatus (FIG.1, Abstract) for digitally compensating the transmission of radio frequencies, comprising: a first oscillator (82-84 FIG.1 & FIG.7, column 7 lines 32-44 where the bus 84 drives the frequency to the first oscillator in the digital module 110 FIG.1/FIG2B); a digital modulator having a numerically controlled oscillator and a mixer (120-116-114 FIG2B/112 FIG9 is the modulator, column 10 lines 27-40, column 26 lines 28-34 where the D/A 120 modulates the signal, column 28 lines 55-63 where the 300 in 112 FIG.9 modulates the signal, column 29 lines 28-42 where 116 produces the modulated signal; 118 FIG2B is the NCO of the modulator; a mixer in 116 FIG.2B); a first frequency monitor that is adapted to measure the frequency of the first oscillator (110 FIG.1 is the frequency monitor to measure the frequency on bus 84); a digital to analog converter driven by the first oscillator (120 FIG2B/FIG.7, D/A is driven by 40MHz on 722 FIG.7, column 7 lines 32-44 where the 40MHz is provided by the 84 bus/the first oscillator); a second oscillator (124 FIG2A); an upconverter driven by the second oscillator (146 FIG2A is the upconverter); a computer adapted to receive

the frequency measurement of the first oscillator and the frequency measurement of the second oscillator, to calculate the errors of the oscillators , to calculate a frequency error produced by the upconverter, and to calculate a NCO setting (column 12 lines 3-18 (ii) calculate the errors of the oscillators, (iii) calculates a frequency error, column 18 lines 50-53 calculates the frequency error and NCO setting, column 21 lines 3-40 wherein calculation and setting are performed); wherein the NCO is adapted to receive the NCO setting from the computer to cause the upconverter to transmit a signal of a desired frequency to an antenna (column 2 lines 20-25, lines 35-55, the objections of this reference).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (US 6246960 B1) in view of Kumar (US 5748677) and Phillips et al. (US 5867535).

Regarding **claim 1**, except explicitly specify (1) a first oscillator/a second oscillator and (2) the downconverter mixer, Lin discloses all subject matter claimed, an apparatus (FIG.2a) comprising: a first oscillator (36 FIG.2a, frequency provided to 33 down converter FIG.2a as the first oscillator); a downconverter (33 FIG.2a) driven by the first oscillator; a first frequency monitor adapted to measure the frequency of an oscillator (36-354 FIG.3a, column 9 lines 13-15, where the Oscillator Circuit and Micro-Processor monitor/measure the frequency of the

oscillator); an oscillator circuit (36 FIG.2a, the frequency provided to 34 A/D FIG.2a can be the second oscillator); an analog-to-digital converter (34 FIG.2a) driven by the oscillator circuit; a digital receiver (35 FIG.2a, FIG.3a) driven by the oscillator circuit, the digital receiver having a numerically controlled oscillator (Carrier NCO/Code NCO FIG.3a); a second frequency monitor adapted to measure the frequency of the second oscillator (36-354 FIG.3a); a digital demodulator (352 FIG.3a); and a computer (354 & 40 FIG.3a) adapted to receive the frequency measurements of the oscillators (frequency provided to 33 down converter FIG.2a can be the first oscillator, the frequency provided to 34 A/D FIG.2a can be the second oscillator) to calculate the errors from the oscillators and from the mixer (the carrier offset), and to calculate the NCO setting; wherein the NCO is adapted to receive the NCO setting from the computer (delta frequency FIG.3a).

With respect to the item (1), Kumar teaches the first oscillator and the second oscillator (if the two oscillator have to be physically separated, 33, 35 FIG.5, column 8 lines 28-column 9 line 31 wherein the 33 FIG.5 for the baud frequency of the ADC can be such as a PLL, crystal oscillator, etc., column 9 lines 32-66 wherein the 35 FIG.5 for the carrier frequency can be a PLL, etc., stated in column 8 lines 28-35 and lines 53-56), as the oscillator circuit used by Lin to provide different frequencies, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the different types of oscillators taught by Kumar in the Lin's oscillator circuit to have a more flexible way to provide the reference frequencies for the synchronization between transmitted and received signals.

With respect to item (2), Phillips et al. teaches the converter having a mixer (DIGITAL DOWNCONVERTER FIG2B). As the downconverter used by Lin, at the time of the invention, it

would have been obvious to a person of ordinary skill in the art to have the mixer taught by Phillips et al. implemented in the Lin's downconverter to do the converting function.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Chang
January 22, 2004

CHIEH M. FAN
PRIMARY EXAMINER